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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,907	12/26/2001	Yun-Ho Jung	8733.565.00	7489

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EXAMINER

PADGETT, MARIANNE L

ART UNIT PAPER NUMBER

1762

DATE MAILED: 10/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/025,907

Applicant(s)

JUNG, YUN-HO

Examiner

Marianne L. Padgett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 7/12/04 & 8/11/04.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 1-4 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

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1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/11/04 has been entered.

2. Claims 5-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Independent claim 5, line 7 has the limitation of the "mask controlling fine movement of the mask". This phrasing is in the original claim 5, hence is not new matter, but no support for a self motivated or powered mask, i.e. a mask that controls its own movements, was found in the specification, hence this concept is NOT enabled by the disclosure. It is noted that according to page 7-8 [0021-22] that it is the mask stage that controls the masks movements.

3. Claims 5-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

As there is no enablement of the mask controlling its own movements, the amendment that requires that movement of the mask to be stepped is New Matter, as there is consequently no enablement for the self-controlled mask to cause its own movement to be stepped. Note the

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body of the claim is inconsistent with the preamble, as lines 16-20 as amended refer to using the mask stage for stepping the mask.

On page 8, [0023] might be considered to support the “stepped”, etc., limitation of the amendment (except for mask controlled movement) even though the terminology of is not used, as the descriptions of moving discrete amounts (several μm) or after an action is completed, can be considered to describe “stepping”. However the phrasing only implies stepping, as did the previous claim language, not necessitates. Fig 5, esp. A+C+E, as described with respect to the Fig. 4 apparatus in [0036-42], explicitly illustrates the stepping requirement, so for stage control of mask stepped mask movement, plus stepped movement of stage to start crystallization of a new block, support is present.

4. Claims 5-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The preamble of claims 5 is inconsistent with the body of the claim (lines 7 and 16-20), as described above, for how the movement of the mask is controlled for “fine” presumably several micrometer movements is variously attributed to the mask itself or the stage, thus creating ambiguity or certainties.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Im (6,368,945) as applied and discussed in papers mailed 4/12/04 (section 6) and 11/14/03 (section 11).

As noted in the advisory, applicant's citation of the lines in Im et al (6,368,945 B1) that teach movement of the masking system and/or the sample stage (col. 4, lines 39-49), then repeating the previously refuted argument that this same teaching does not exist in Im et al is NOT convincing. Applicant's other allegation that appears to be arguing that all movement in Im et al is continuous, not stepped is also inaccurate, since only Im et al's scanning in one direction, exemplified by Y is continuous, while movement in the perpendicular direction, X, is taught to be "stepped" with example of 2 cm or 3 micrometer given. See col. 7, lines 5-26+; col.9, lines 1-67+; and fig. 1B & 7. Particularly note that while the exemplary discussion all refers to the sample stage being moved, lines 39-44 of col. 4 specially says that the movement illustrated in figure 1B can result from "motion ... of the sample translation stage 180 and/or the movement of the mask system 150". Note in figure 1B, since the mask is producing beamlet that follow the path denoted by 25, 30, 35, 45, 50, 55, ...75+, and re# 5 & 6 are column equivalents to the claimed blocks, stepping movement to complete crystallization of both individual blocks & of other blocks is taught.

To put teachings of Im in context of the claims, note that the continuous scanning in the Y-direction to the sample edge, exemplified in Fig. 7, by paths 705, 725, etc., described col. 9, lines 1-6+, is consistent with the "applying the laser beam..." steps such as lines 9-10 of claim 5 of the present claims, while the microtranslations in the x-direction (col. 9, lines 7-9, illustrated in fig 7) is consistent with the stepping of the mask (claim 5, lines 16-20), especially taken in

consideration with teachings of col. 4, lines 12-18, 39-49, esp. 42-46, and 54-57. Im's translations in the X-direction to start different columns are consistent with claim to step to crystallized a new block, hence while the amendment clarifies applicant's intended process, it does NOT eliminate that of Im from reading on the claims, as it does not prohibit Im's continuous scanning in the Y-directed from one edge of the substrate to another, as the claimed blocked are of no particular shape, and the application of the laser is not limited to stationary use.

7. Applicant's arguments filed 7/12/04 and discussed above have been fully considered but they are not persuasive.

8. Other art of interest include Jung (2004/0135205A1) to applicant expect the claims therein are directed to particular devices; Yang (6,770,545 B2), Crowder et al (6,777,276 B2), Takeda et al (2004/0060504 A1), and Hwang (2004/0076894 A1) to SLS techniques of interest, but that are not prior art; and Crowder (6,767,804 B2) to a SLS process that is of interest, but apparently with only one set of stepping translation of the mask.

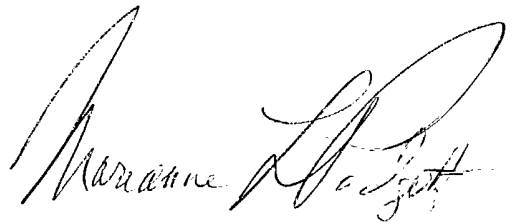
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M L. Padgett whose telephone number is (571) 272-1425. The examiner can normally be reached on Monday-Friday from about 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. L. Padgett/af
September 9, 2004
October 20, 2004

A handwritten signature in cursive script, appearing to read "Marianne Padgett", written in black ink.

**MARIANNE PADGETT
PRIMARY EXAMINER**